DOCUMENT RESUME

ED 183 502 SP 015 301

AUTHOR Eddy, Wesley P.
TITLE Annual Research Highlights. 1978-79.
INSTITUTION Alberta Dept. of Education, Edmonton. Planning and Research Branch.
PUB DATE Sep 79
NOTE 51p.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Achievement; Curriculum Evaluation; Educational Objectives; Foreign Countries; Handicapped Students; Instructional Programs; Mentally Handicapped; Program Costs; *Program Design; *Program Development; Reading Instruction; *Research Projects; School Administration; Student Attitudes; Testing; Vandalism
IDENTIFIERS Alberta; *Canada

ABSTRACT

Abstracts are presented of research studies undertaken in 1978-79 by the Planning and Research Branch of Alberta, Canada Education Department. Each report contains a statement of purpose, a description of design, an outline of results and recommendations based on study findings. Bibliographic information is provided on each study as well as information on the distribution of study reports. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SP
Gac
4.P
Sep 79

ED183502

Annual Research Highlights

1978-79

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Wesley P. Eddy

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

planning & research

Alberta
EDUCATION

SP 015 201

ANNUAL
RESEARCH
HIGHLIGHTS
1978-79

Planning and Research Branch
9th Floor Devonian Building
11160 Jasper Avenue
Edmonton, Alberta
T5K 0L2
Telephone: (403) 427-2991

ALBERTA EDUCATION
September 1979

ISSN 0702-7494

FOREWORD

This is the fourth edition of Annual Research Highlights published by the Planning and Research Branch. Its primary purpose is to provide those interested with a guide to the operation of the Branch and to report in capsule form on a selection of research projects completed through contract with or by the Branch over a one-year period (July 1, 1978 to June 30, 1979).

The first edition of Annual Research Highlights contained abstracts of selected studies completed from the time the Research and Planning Branch was first organized in 1974 to the end of June, 1976; the second edition contained abstracts of some of the projects undertaken and completed between July 1, 1976 and June 30, 1977; and the third edition contains abstracts of studies completed between July 1, 1977 and June 30, 1978. These publications provide information about a selection of research studies undertaken by classroom practitioners, school systems, and educational organizations which relate directly to some aspect of basic education (ECS to Grade 12) in Alberta since the Branch's inception.

THE PLANNING AND RESEARCH BRANCH

Introduction

"Planning is a process of preparing a set of decisions for action in the future, directed at achieving goals by optional means."[1]

Branch Organization

The Planning and Research Branch is a service branch of Alberta Education which provides information to planning and policy-makers within Alberta Education to assist in making realistic decisions about educational directions and programs. The Branch also provides information through Alberta Education to the education community.

The Branch is divided into two sections. A policy section identifies existing and future problems and generates policy alternatives, and a research section carries responsibility for coordinating research and disseminating the results of this research to appropriate users.

How Are Studies Handled?

Over two-thirds of the projects undertaken by the Branch were initiated by school boards, related educational organizations, universities, colleges or school business officials. The remainder were commissioned by Alberta Education as internal management studies or as projects undertaken in cooperation with other departments or provinces.

With the exception of those studies which are carried out by the Planning and Research Branch staff for internal management purposes, all studies and projects are handled by contract. Contracts are entered into with incorporated individuals, organizations and institutions. For example, in a classroom-based project or study undertaken by a teacher, the contract would be between the school board and Alberta Education.

All projects must provide for an adequate evaluation component. Proposals should include a description of how they are to be evaluated and include an adequate budget for evaluation.

---

[1] Y. Dror, "The Planning Process: A Facet Design," International Review of Administrative Services, 29 (1), 44-58.

All projects are supervised by personnel of Alberta Education. Many projects are, in fact, supervised by a committee which includes personnel from Alberta Education and also include independent personnel acceptable to all parties.

How Are Studies Selected for Funding?

The study must:

1. Relate directly to some aspect of basic education in Alberta;

2. Focus primarily on applied or developmental research as opposed to basic research;

3. Have a researchable component which tests new ideas, new methods, new program delivery techniques and/or new administrative and management practices which will improve services to the child in the classroom;

4. Have applications for other school systems in Alberta;

5. Lead to results that are potentially cost-effective, in the following order:
   i better service at less cost
   ii better service at the same cost
   iii equivalent service at less cost
   iv better service at a marginally increased cost;

6. Lead to minimal implementation and on-going costs;

7. Reflect provincial priorities.

What Are Some Provincial Priority Areas?

Provincial priorities change from time to time in order to reflect both emergent and long term needs. Some current priorities are:

1. Quality assessment, education standards and improvement of educational services;

2. Educational opportunities for the disadvantaged and learning disabled;

3. Projects which will lead to more efficient use of fiscal and human resources;

4. Consumer and environmental education, including energy conservation;

5. Educational technology.

In general, more favorable consideration is given to those requests for funding which provide for a commitment of human and financial resources from the applicants.

How Can You Access Research Funding?

There are basically two steps in applying for financial support.

1. An applicant should submit a brief prospectus summarizing the needs, purpose, general methodology, expected outcomes and budget requirements of the project.

2. If the prospectus meets general criteria and overall priorities, the applicant will be advised to develop and submit a detailed proposal.

Who Do You Contact?

Dr. M. R. Fenske, Director, Planning and Research Branch, Alberta Education, 9th Floor Devonian Building (West Wing), 11160 Jasper Avenue, Edmonton, Alberta, T5K 0L2.

1978-79 RESEARCH PROJECTS

INTRODUCTION

A majority of the following research projects were initiated in response to the needs of decision-makers who must resolve educational problems and/or concerns. They were brought to the attention of the Planning and Research Branch by school boards, other branches of Alberta Education and other educational organizations. The Branch continued to give priority to studies proposed by the practitioner to improve service to the child in the classroom and lead to results that are potentially applicable to all classrooms in the province.

In keeping with current provincial priorities twelve studies, which were reasonably large in scope and magnitide, were commissioned through the Branch by Alberta Education to fulfill the mandate of the Minister's Advisory Committee on Student Achievement (MACOSA) and are included in this year's edition of Highlights.

The reader will note that each summary contains information about the distribution of copies of the study. The best procedure to obtain a copy of a study would be to contact a school in your area, or association libraries such as the Alberta Teachers' Association, the Alberta School Trustees' Association and the Alberta Federation of Home and School Associations, the libraries of provincial secondary institutions, or Regional Offices of Education. The Planning and Research Branch also has a limited number of copies of some of the project reports which are available as long as supplies last.

TABLE OF CONTENTS

	Page
Foreword	i
The Planning and Research Branch	ii
1978-79 Research Projects--Introduction	v
Table of Contents	vi
A Study of the School System Secretary-Treasurer in Alberta	1
Computer Assisted Instruction for Mentally Handicapped Students: Basic Money Handling Skills	2
Curriculum Evaluation Project	4
Guidelines for Conserving Energy in Alberta Schools	6
Integration of Handicapped Students in the Regular Classes of the Calgary Board of Education	7
Language and Readiness Assistance	9
Mighty Moose	10
REACH	12
School Vandalism in Alberta: An Updated Status Study--1974-1977	13
Student Achievement in Alberta (MACOSA)	15
Alberta Assessment of School Mathematics (MACOSA)	16
Alberta Grade 3 Achievement Study (MACOSA)	18
Alberta Language Arts Reading and Writing Achievement Study (MACOSA)	20
Assessing Achievement in Listening and Speaking (MACOSA)	22
Alberta Science Achievement Study (MACOSA)	24
Attitudes Towards the World of Work (MACOSA)	27
Development and Administration of the High School Social Studies Achievement Tests (MACOSA)	30

Page

Development of Models for Assessing Affective Objectives in the Social Studies (MACOSA) 32

Elements Related to Student Success in Schooling and Education (MACOSA). 34

Listening and Speaking Objectives (MACOSA) 36

School-Based Elements Related to Achievement: A Review of the Literature (MACOSA) 38

School Subjects Attitude Scale (MACOSA) 40

A STUDY OF THE SCHOOL SYSTEM SECRETARY-TREASURER IN ALBERTA

Purpose

The study examined the legal position, functions, profile, conditions of employment, recruitment practices and role relationships of the school system secretary-treasurer in Alberta.

Design

The study findings were based on a review of studies and legislation, personal discussions with individuals in the Alberta education system, and a questionnaire circulated to secretary-treasurers, trustees, and superintendents.

Findings

The findings of the study describe the legal position, functions, profile, conditions of employment, role relations with the board, with the superintendent, with the county secretary-treasurer, and with the Department of Education, the role of the School Business Officials of Alberta and recruitment practices.

Recommendations

Recommendations based on the study findings are divided into recommendations for the Department of Education, Department of Municipal Affairs, school boards, and the School Business Officials of Alberta.

Bibliographic Information

Peat, Marwick and Partners, A Study of the School System Secretary-Treasurer in Alberta, Alberta Education, June 1979. Summary Report, 16 pages; Full Report, 153 pages.

Distribution

The Full Report was distributed to all school board chairmen, secretary-treasurers, superintendents of schools, ministeries of education, and libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, ERIC Document Services and Micromedia. The Summary Report was distributed to all of the above as well as to libraries of faculties of education, MLA's, newspapers, TV and radio stations in Alberta.

COMPUTER ASSISTED INSTRUCTION FOR MENTALLY HANDICAPPED STUDENTS: BASIC MONEY HANDLING SKILLS

Purpose

The purpose of this study was to explore alternative means of providing the mentally handicapped with such individualized social education as is essential for their successful integration. Through the use of computer assisted instruction (CAI) an attempt was made to solve the problem of teaching the necessary arithmetic skills for handling small amounts of money to the students at Christine Meikle School in Calgary.

Design

Thirty-two students were paired according to pre-test results and randomly assigned to either the treatment group or the control group. The training period began on January 16 and lasted until March 2. A post-test was administered immediately following the training period.

The training program consisted of computer programs chained together in related modules. Each module dealt with a concept necessary for successful handling of coins up to 99 cents. These concepts included numeral recognition, counting up to 99, single addition, and coin recognition.

The CAI system used in the study consisted of a series of programs written in BASIC-PLUS, supplied on a PDP-11/70 computer system. The equipment used consisted of a Cathode Ray Tube terminal interfaced with a random access slide projector, and a hard copy teletype terminal. Using an acoustic coupler the terminals were connected to the computer by a single telephone line.

Findings

The results of the study showed that the students through their interaction with CAI improved to a degree significant beyond the .001 level of confidence, indicating that CAI offers a viable and effective method of teaching social skills to the mentally handicapped.

Conclusions and Recommendations

The findings of this study revealed that the lower functioning of the trainable mentally retarded students learned to count the number of coins, but not to compute the value of the coins. Future programs to teach these students the difference between the concepts of 'how many' and 'how much' are urgently needed.

Also, in order to reduce the cost involved in CAI training of the TMR students, the use of micro computers for this purpose should be investigated.

Bibliographic Information

Else Holz, Computer Assisted Instruction for Mentally Handicapped Students in Basic Money Handling Skills, Alberta Education, April 30, 1979, 34 pages.

Distribution

The report was distributed to school superintendents in Alberta, schools for the mentally handicapped and libraries of Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, universities in Canada, ERIC Document Services and Micromedia.

CURRICULUM EVALUATION PROJECT

Purposes

The purposes of this study were:

1. To pilot the use of the Stake model for collecting and interpreting evaluation information concerning Alberta senior high school programs.

2. To undertake an initial feasibility test of this procedure as an organized system for longitudinal monitoring of selected aspects of school programs.

3. To gather evaluation information based on the perceptions of pupils while in school, and one year and five years after graduation.

Design

The methods employed were as follows:

1. Selection of a random sample of pupils in grade eleven during 1970-71.

2. Administration of three questionnaires to this group: the first during their grade eleven year, the second the year following graduation, and the third five years after graduation from high school.

3. Use of grade nine and high school student data from Alberta Education records.

4. Analyses of the data in accordance with the Stake model including comparisons and the determination of relationships.

Findings

Numerous findings were reported under the following headings:

1. Course selection, e.g., in retrospect, those responding on the follow-up questionnaire recognized the need to include Business, Vocational, Physical Education and Practical Arts courses.

2. Career plans, e.g., in 1977 no Vocational or Business student was unemployed.

3. Educational achievements, e.g., fewer than sixty percent of those registered in grade eleven in spring of 1971

reported achieving a high school diploma (63% females, 50% males).

4. Occupational achievements: e.g. Vocational students reported a higher level of career satisfaction and higher wages than did students from other programs.

5. Client evaluation of curriculum: e.g. The goals of basic education perceived by young adults to have been achieved most adequately by the school were: 1) develop basic and special knowledge competencies, 2) learn how to organize, analyse and use information, and 3) develop skills in communication. The goals receiving the lowest ratings were: 1) develop management skills, and 2) learn about the world of work.

   Subject areas judged by the young adults as most adequately meeting their objectives were Physical Education (76%), Mathematics (72%), Science (66%), and Industrial Education (65%). Subjects ranked lowest in meeting their objectives were Second Languages (41%) and Drama, Art and Music (44-50%).

6. Recommendations included: 1) the need for in-depth evaluation of specific programs, 2) the installation of an on-going program of evaluation at the provincial level which would employ the model and incorporate perception data from students and graduates, and 3) achievement test data as one supplementary source of information.

Bibliographic Information

D. Collett, Curriculum Evaluation Project, Alberta Education, Summer 1978. Executive Summary, 16 pages; Final Report, 205 pages.

Distribution

The Executive Summary was distributed to all schools, superintendents, board chairmen, management staff of Alberta Education and various organizations. The Final Report was sent to the ERIC Document Services, School Superintendents, and libraries at Canadian universities and Regional Offices of Alberta Education.

GUIDELINES FOR CONSERVING ENERGY IN ALBERTA SCHOOLS

Three projects have been commissioned to study energy conservation in schools: 1) ways of managing the use of energy in schools, 2) energy-conserving modifications which can be made to existing schools, and 3) energy-conserving designs for new schools. None of these three studies is yet completed, but enough preliminary information has become available to determine that a considerable reduction in total energy costs should be realizable. A booklet of guidelines setting out guidelines for conserving energy in schools was therefore prepared and distributed to all Alberta schools.

Bibliographic Information

Planning and Research Branch, Alberta Education, Guidelines for Conserving Energy in Alberta Schools, Alberta Education, 1978, 47 pages.

INTEGRATION OF HANDICAPPED STUDENTS IN THE REGULAR CLASSES OF THE CALGARY BOARD OF EDUCATION

Purpose

The major purpose of the study was to determine the extent and effects of integration of handicapped children into the regular schools of the Calgary Public School System. Recommendations were requested concerning optimal levels of integration, and concerning costs of achieving these optimal levels.

Design

Background information was obtained through literature review and through interviews with knowledgeable persons in the community. Extent was assessed through statistical records and through direct questioning of principals. Opinions were sought concerning the effects of and desired levels of integration. Five other Canadian school systems of comparable size were contacted to determine their practice.

Findings

The research literature does not come to definite conclusions concerning the effects of integration . Respondents interviewed in Calgary were consistent in their views that integration is generally desirable if the student has been appropriately placed and if adequate resource support is provided. Teachers and principles generally do not support the integration of students with severe handicapping conditions.

Recommendations

Recommendations are addressed to the need to rationalize and plan for support of the mildly and moderately handicapped students presently located in regular classrooms. Integration of children with severe handicapping conditions is recommended only on the basis of careful assessment of each individual case. The need for the continuing existence of some segregated facilities is recognized. It is suggested that the Board experiment with prototype models of resource delivery to several integrated schools for the next two years to allow time for assessment and on-going planning as systems are still being developed.

Bibliographic Information

Canadian Institute for Research, A Study of the Integration of Handicapped Students in the Regular Classes of the Calgary Board of Education, Alberta Education, May 30, 1978. Final Report, 74 pages; Complete Report, 486 pages.

Distribution

The Final Report was distributed to all Alberta schools, superintendents, special education consultants, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, Alberta universities, ERIC Document Services and Micromedia. The Complete Report was sent to the libraries listed above.

LANGUAGE AND READINESS ASSISTANCE

Purposes

The purposes of this project were to develop a screening mechanism for the early identification of children with learning handicaps, and to develop a summer program for the children identified as learning handicapped.

Design

The project was carried out in Rocky Mountain House during the summer of 1977. The screening devise was developed, a simple procedure for recording data was designed, and a program was developed and tested.

Findings and Conclusions

It was possible for non-certificated personnel with a minimum of training to use the screening device which was developed and the remedial program to teach young children with learning deficits and thereby remediate deficit areas.

Bibliographic Information

L. Splett, Language and Readiness Assistance, Alberta, Education, June 1977, 25 pages.

Distribution

The report was distributed to all superintendents of schools in Alberta, ECS consultants and libraries of the Regional Offices of Education.

MIGHTY MOOSE

Purpose

The purpose of the project was threefold. First, to develop program materials specifically designed as supplementary, beginning reading materials for native students. Second, to determine if these materials effectively contributed to the curriculum and improved reading skills, oral language skills and the self-concept of primary-grade native students. Another purpose of the study was to improve teacher competency in reading instruction through professional in-service instruction and the use of a teacher guidebook for the reading materials.

Design

The program materials consisted of ten adventure stories about a magical, mighty moose and his two nature friends. Each story was recorded in Cree and English on a cassette tape and was accompanied by a colour filmstrip.

The study was conducted during the 1977-78 school year with teachers of second and third grade students in Northland School Division. Classes were randomly assigned to experimental or control groups.

Findings

The findings showed no significant differences between the groups on expressive vocabulary and language ability or mean score for the Multiple Choice Cloze Reading Test. However, teacher reaction indicated strong support for the program, and the limited duration and intensities of the program may have been responsible for the non-significant findings.

Recommendations

The Mighty Moose program has potential for use as a supplementary beginning reading program to help avoid the tendency toward over-dependence on a single instruction method or material to teach reading.

Bibliographic Information

Northland School Division, Report of the Mighty Moose Reading Project 1977-78, Alberta Education, January 1979, 50 pages.

Distribution

The report was distributed to all Alberta School superintendents and schools involved in the program as well as libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Canada, ERIC Document Services and Micromedia as well as to Ministeries of Education in Canada.

REACH

Purpose

The project was designed to use a different approach in education non-academic students. The REACH program was designed to provide practical activities to students so as to prepare them for independent successful living. The program was of three years duration with fifteen students from each of grades eight, nine, and ten.

Design

The core subjects were redesigned so as to be of observed value to the students. A work experience program was to be one of the most important aspects of the project. Senior students spent approximately half their day at work experience stations. The work experience program was designed to prepare students to go directly into the world of work, and to provide them with positive experiences that might encourage them to seek further education and/or training.

Observations and Conclusions

Parents, teachers and students all expressed satisfaction with the program as opposed to having students remain in regular classes.

Bibliographic Information

Harry Collinge High School, Final Evaluation: REACH, unpublished report, February 1979.

Distribution

The report of the project has not yet been published nor distributed.

SCHOOL VANDALISM IN ALBERTA: AN UPDATED STATUS STUDY--1974-77

Purpose

The primary purpose of this study was to establish a trend, if any, of vandalism costs for school jurisdictions throughout the province of Alberta for the years since 1974 and then draw some conclusion about the efficacy of measures adopted since the publication of the initial status study in 1976.

Design

A survey was made of all the school divisions and districts in Alberta by mailed response to a prepared form which required the Secretary-Treasurer of each school jurisdiction surveyed to indicate the dollar costs of school vandalism for the calendar years 1975-1977 in each of four categories: 1) glass damage, 2) building and interior content damage, 3) theft associated with break-ins, 4) arson. Further these costs were separated by the month in which they were incurred, together with a monthly tabulation of incidents of vandalism. Enrollment figures were obtained so that per pupils costs could be established.

Findings

Total costs of vandalism for school jursidictions in the province of Alberta reporting (78%) for years 1974 (initial study) and the follow-up years 1975-1977 is: 1974 - $2,234,000; 1975 - $1,343,000; 1976 - $935,000; 1977 - $2,722,000. Analysis of the data supplied while indicating higher overall totals when comparing the beginning year (1974) with the last year of the study (1977), nevertheless reveals a relatively stable condition. What substantial categorical increases there are can be explained in terms of the inflationary costs of replacement and repair which calculates at about 10% per year. As far as judgements about the heavy investments in security measures, it is still too soon to make any statements about their effectiveness except to point out that school jurisdictions seem to be holding their own with respect to vandalism losses.

Recommendations

Several general comments must be made in order to avoid any misconceptions or misunderstandings. First, and perhaps foremost, the caveat must be delivered that the "precise" costs of acts of vandalism in our provincial schools cannot be

readily or accurately measured under the conditions which obtain at the present. The statistics derived in these studies are at best only estimated of the actual number of incidents and costs. There is no uniform, provincial-wide reporting system for school vandalism; there is a lack of a standard, operational definition of just what constitutes "vandalism." Nor, for many reporting school jurisdictions, are the records, whatever form they might take, accurately and conscientiously kept, if at all. School jurisdictions in the province should be required to faithfully record, on a uniform basis, the information with respect to vandalism losses. Until this happens survey reports of this kind must be understood in the full light of the deficiencies described.

Other factors affecting the interpretation of the survey data is the problem of inflation. Dollar costs in themselves are misleading and any increases indicated for a particular year must be taken in the context of corresponding increases in the number of incidents as well as the added costs of replacement and repair. Occasionally, a single act of vandalism, particularly an incident of arson, will have a shattering impact on the total costs to a school jurisdiction which, while showing a significant increase in dollar costs, might have at the same time effected a correspondingly significant decrease in the total number of incidents.

Furthermore, any analysis of vandalism costs must take into account the rather substantial amounts that are spent from time to time on sophisticated security systems designed to prevent or discourage vandalism as well as the costs of insurance premiums. While the costs for security and insurance are noted in this report, they are not included in the comparison of total costs. This aspect of the problem deserves addition and careful study.

Bibliographic Information

C. J. Schott, School Vandalism in Alberta: An Updated Status Study - 1974-1977, Alberta Education, June 1978, 39 pages.

Distribution

The report was distributed to all Alberta school system secretary-treasurers and superintendents, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, university libraries in Canada and to ERIC Document Services.

STUDENT ACHIEVEMENT IN ALBERTA (MACOSA)

Purposes

The Minister's Advisory Committee on Student Achievement (MACOSA) evaluation activities were conducted for the purpose of monitoring and reporting information to the various publics as a basis for decision making about the continuation, discontinuation or modification of a program, and the improvement of instruction for groups (program evaluation).

Design

To provide the necessary information for drawing conclusions and making recommendations about student achievement, MACOSA commissioned a number of studies. On the basis of information from all of these sources, MACOSA arrived at some general conclusions about student achievement in Alberta and suitable evaluation procedures.

Observation and Conclusions

MACOSA's recommendations can be grouped into three areas: 1) those dealing with a proposed assessment program, 2) those dealing with the departmental examination question, and 3) those dealing with a proposed evaluation policies board and referrals.

Bibliographic Information

Alberta Minister's Advisory Committee on Student Achievement, Student Achievement in Alberta, Alberta Education, May 1979. Executive Summary, 16 pages; Complete Report, 90 pages.

Distribution

The Complete Report and the Executive Summary were sent to all Alberta schools, school board chairmen, superintendents of schools, faculty of education libraries in Canada, city libraries in Alberta, Ministeries of Education, and libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, ERIC Document Services and Micromedia.

ALBERTA ASSESSMENT OF SCHOOL MATHEMATICS (MACOSA)

Purposes

The purposes of this study were to provide information about current levels of mathematics skills and knowledge among students in Alberta schools, and to provide a data base for future assessments.

Design

Fifteen hundred items from similar assessments were selected and reviewed by teachers in terms of clarity, fairness, and representativeness. The remaining items were pretested and the number of items was reduced so the tests for each of grades 3, 6, 9, and 12 included 120 questions. Most of the questions were appropriate to the target grade, but some common items were included at more than one grade level for comparison purposes.

A ten per cent random sample of Alberta schools was selected, and all students in grades 3, 6, 9, and 12 in attendance on the day the tests were administered were included in the sample. A form of matrix sampling was employed so that each student did not respond to all test items. The percentages of correct responses were recorded for the total group and for sub-groups defined according to sex, school size, and for grade 12, the type of high school mathematics program.

All tests were administered on May 17, 1978.

Findings

The data gathered provided a data base or "index" of achievement in mathematics at the four grade levels. Grade 3 students achieved highest scores on the fundamental skills of mathematics and lowest on decimal tasks.

Grade six students received high scores on fundamental skills and low scores on rational numbers and integers.

Areas showing high performance in grade 3, remained strong in grade 9, but scores on rational numbers were low.

The performance in number work in grade 12 was about the same as for grade 9.

The study also analyzed its findings according to sex, school size, and for grade 12, the type of high school mathematics program.

Results of this study showed that boys did significantly better than girls. This difference became more pronounced at each higher grade level.

School size showed significantly in accounting for achievement differences between grades 3 and 9. At the grade 3 level, the small school (enrolment under 30 per grade) showed the best results consistently over the different content areas. In grade 6 the medium school (enrolment 31 to 70 per grade) began to emerge as dominant, and in grade 9 the medium school was clearly dominant. School size failed to make any difference at the grade 12 level.

Six alternative programs were chosen at the grade 12 level. The best scores were made by those from the Mathematics 30 sample, followed in order by Mathematics 20 and Mathematics 33, with the lowest scores from those in Mathematics 23, Mathematics 25, and one mathematics course.

MACOSA Conclusions and Observations

MACOSA rated achievement related to knowledge of number, facts and computations as satisfactory. Performance in problem solving, geometry, measurement, and consumer mathematics was judged to be generally unsatisfactory.

Suggested reasons for low performance levels are only speculative, but it seems likely that students tend to do well on the topics that receive emphasis in the curriculum.

Bibliographic Information

A. T. Olson, D. Sawada, S. E. Sigurdson, Alberta Assessment of School Mathematics, Alberta Education, April 1979, Executive Summary, 19 pages; Condensed Report, 94 pages.

Distribution

The Condensed Report was distributed to all superintendents of schools in Alberta, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Alberta, ERIC Document Services and Micromedia. The Executive Summary was sent to all of the above as well as all faculty of education libraries in Western Canada and all Alberta schools.

ALBERTA GRADE 3 ACHIEVEMENT STUDY (MACOSA)

Purposes

The purposes of this study were:

1. to establish 1977 benchmarks of achievement in the basic skills at the grade 3 level in Alberta; and,

2. to make inferential comparisons, where possible and tenable, between 1977 achievement and that of 1956.

Procedure

The following commercial standardized tests were used; first in 1956 and again, in their latest versions, in 1977: Gates MacGinitie Reading-Vocabulary and Comprehension, and California Achievement Tests of Reading, Mathematics and Language. A number of teachers and university educators assessed both sets of tests to determine their applicability to the present Alberta curriculum, and items which were judged invalid were eliminated before the results were processed.

The tests were administered during May and June of 1977 in a 10 per cent random sample of Alberta schools offering instruction at the grade 3 level. All grade 3 pupils in these schools were tested. For these comparisons the results of a companion study, the Edmonton Grade 3 Achievement Study (Clarke et. al., 1977) were also used.

The average scores of various groups were compared in the following ways: 1977 achievement scores for the four large urban districts; Edmonton Public School District 1977 norms were compared with 1956 norms in the same district, with 1977 averages in other large districts, and with 1977 averages in all other school systems in Alberta; and all of the scores were compared with norms reported by test publishers.

Findings

Scores on the tests administered in 1977 in the four large urban districts were very similar. The average scores of this metropolitan group were generally equal to or slightly below those of the non-urban group in counties, divisions and rural districts. Five of the twelve comparisons favored the non-urban students and one favored those in the metropolitan group. Edmonton Public School District scores for 1977 were similar to those from the same district in 1956. All scores exceeded the publisher's norms.

Conclusions

Differences in grade 3 achievement between rural and large urban groups which may have existed previously have disappeared. A study by Carmichael and Rees (1955) showed that reading scores for grade 4 students in urban town schools were significantly higher than scores in rural schools during the mid-1950's. If differences favoring the urban student at that time in the aspects of reading, language and arithmetic performance measured by these instruments also existed, it is evident that these differences do not now exist. The Edmonton Grade 3 Achievemert Study indicated that Edmonton Public School District performance levels were maintained or had improved. The inference is, therefore, that there was a general improvement in achievement at the grade 3 level in Alberta.

Bibliographic Information

S. C. T. Clarke, V. Nyberg, and W. H. Worth, Alberta Grade 3 Achievement Study, Alberta Education, Fall 1978, 72 pages.

Distribution

The report was distributed to all Alberta schools, school superintendents, board chairmen and to the libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, ERIC Document Services and Micromedia.

ALBERTA LANGUAGE ARTS READING AND WRITING ACHIEVEMENT STUDY (MACOSA)

Purposes

The purposes of this study were to provide information about current levels of student achievement in reading and writing for selected objectives at the grades 3, 6, 9, and 12 levels in Alberta schools, and to provide a data base for future assessment.

Procedures

A comprehensive list of specific objectives suitable for use in developing tests of reading and writing at the grades 3, 6, 9, and 12 levels was generated. These objectives were then ranked in terms of their importance to the total program in order to develop appropriate test items.

After piloting and field testing the tests were administered at each of the four grade levels in a random sample of 284 schools on May 17, 1978.

The writing tests required manual scoring. Each test was marked by two especially trained markers using a scale of five. The writing products were marked on a holistic scale as well as a descriptive marking scale based on the objectives selected for each grade level.

Findings - Reading

At the grade three level, highest achievement was recorded in obtaining word meaning through analysis of sounds and lowest achievement was in comprehension of clear and direct statements of details.

The highest score for grade six was for obtaining the meaning of a word from context and the lowest score was for obtaining the meaning of a new word through analysis of the word's parts. Relatively low achievement levels were also evident in identifying implied details and main ideas and in using reading materials to draw conclusions, make predictions, and form judgements.

The lowest grade nine scores occurred in identifying implied main ideas and comprehending clues and direct statements of details. As in grade six, the highest score was achieved in obtaining the meaning of a word from context.

The lowest grade twelve scores were in identifying implied relationships, while the highest scores were in comprehension of clear and direct statements of main ideas.

Findings - Writing

Scores for all four grades were low on the short answer section of the test which assessed abilities in capitalization, spelling, punctuation and sentence structure. Performances on the longer writing assignment varied from grade to grade, but on the basic of the descriptive scoring scale, students in all grades achieved high scores in limiting content to the topic and writing legibly. There was reported that 22.1% of grade 12 students were in need of remediation and 3.3% did not produce sufficient material for scoring.

Conclusions and Observations

Performance in reading was found to be generally satisfactory at all grade levels. Students were generally more successful in the writing assignment than at finding errors in or manipulating structural assignments.

Bibliographic Information

Canadian Institute for Research, Alberta Language Arts Reading and Writing Achievement Study, Alberta Education, March 1979, Condensed Report, 184 pages; Executive Summary, 21 pages.

Distribution

The Condensed Report was distributed to all superintendents of schools in Alberta, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Alberta, ERIC Document Services and Micromedia. The Executive Summary was sent to all of the above as well as all faculty of education libraries in Western Canada and all Alberta schools.

ASSESSING ACHIEVEMENT IN LISTENING AND SPEAKING (MACOSA)

Purpose

The purpose of this study was to design and/or adapt tests for assessing achievement of objectives in listening and speaking in grades 3, 6, 9, and 12.

Procedures

Since a review of literature did not locate any usable tests or items in listening or speaking, the first step was to construct test items in terms of the selected objectives. The tests were pilot and field tested. All testing was conducted under controlled but natural conditions using an audio-tape recorded format. Both tests were kept to a length of an hour or less.

Both the listening and speaking tests attempted to evaluate the expression and reception of three kinds of oral language--spontaneous spoken language, prepared spoken language, and written language read aloud. The tests were also designed to evaluate a variety of oral language factors including vocal, verbal and non-verbal ones.

Conclusions and Observations

The listening and speaking tests pioneer a new area of evaluation and are therefore in the early stages of development. The results of this study are satisfactory enough, however to justify optimism about continued development and revision of procedures to assess achievement levels in these two important aspects of the language arts program.

The tests are designed to indicate whether or not students demonstrate certain skills as described in the program objectives rather than how well students demonstrate these skills in comparision to each other. In general, the tests are adequate for measuring the achievement of groups of students with respect to particular objectives and for evaluating the success of an instructional program, but not suitable for diagnosing individual students.

Test results would be more useful if provincial norms were established and performance standards developed on the basis of these norms and other criteria. Knowledge about the tests and confidence in them would be increased if further analyses, revisions and additions were made.

Bibliographic Information

E. Plattor, W. R. Unruh, L. Muir, and K. D. Loose, Assessing Achievement in Listening and Speaking. Alberta Education, March 1979, Executive Summary, 18 pages; Final Report, 370 pages.

Distribution

The Executive Summary was distributed to all Alberta schools, superintendents and libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Canada, ERIC Document Services and Micromedia. The Complete Report was sent to Alberta superintendents.

ALBERTA SCIENCE ACHIEVEMENT STUDY (MACOSA)

Purposes

To investigate current levels of student achievement in science in Alberta at the grade 3, 6, 9, and 12 levels.

To provide a data base for future assessments.

Procedures

For the grade 3 test, 115 items were chosen from a variety of sources and validated by a randomly selected group of 20 primary teachers; for the grade 6 test 146 items were chosen from similar sources and validated by a panel of 18 upper elementary teachers. A determined effort was made to select items which would reflect the objectives of the elementary science program. The Sequential Tests of Educational Progress (STEP II), Form 3A, with the addition of 15 supplementary items was chosen for grade 9 because it best matched the Alberta curriculum. In grade 12, where the emphasis was to be on more general knowledge of science both in terms of the content of the high school program and the general aims and purposes of science, the STEP II, Form 2A, was chosen because of its relative quality and suitability for gathering the required information. The Test of Understanding Science (TOUS), Form JW, was chosen for both grades 9 and 12 because it appeared to be the most appropriate attitude test among the few such tests which are available.

All tests were administered to a selected 10 per cent stratified random sample of schools.

Findings

In grade 3 performance levels were highest on earth science and lowest on physical science. Students registered relatively low scores in methods of science investigation but demonstrated a reasonable amount of knowledge in the area of science as a human endeavour.

In grade 6 scores were not very high in physical science despite the emphasis of this area in the curriculum. Scores were high on biological science, life science and science methods; and as in grade 3, high scores on earth science were recorded. Scores on perceptions of science and scientists were also relatively high.

In grade 9 students gained their highest scores in biological science, life science and methods of science. Relatively high scores were also recorded in physical science. Achieve-

ment in earth science was quite low while responses to items on science as a human endeavor were low.

Grade 12 students achieved at the highest level on biological and life science items and lowest on earth science items. Performances were relatively high on methods of science and relatively low on science as a field of human endeavor.

Since the tests for grade 3 and 6 contained 47 common items some comparisons were made between these grades. As expected, grade 6 student performance levels on the common items were substantially higher than grade 3 performance levels. However, the grade 6 performance on grade 6 items was somewhat lower than expected.

The most substantial differences between grade 3 and grade 6 performances on common items were in earth science, biological and life science, and science as a human endeavor while smaller differences occurred in physical science, methods of science and interest in science.

Since both grades 9 and 12 students responded to the TOUS, Form JW, and to different forms of the STEP II, similar comparisons can be made between these grades. As expected, grade 12 students scored higher than grade 9 students. In both grades 9 and 12, the girls outperformed the boys on the TOUS. This result would suggest that girls understand the nature of science better than do boys.

A comparison of grades 9 and 12 by content area indicated that both groups performed at a higher level on the biological and life science items and at a fairly low level on the nature of science.

Overall comparison of elementary and secondary students on content areas of the school science programs on the thought level categories of knowledge, comprehension, and application revealed the following: elementary students had higher scores than secondary students at the knowledge level, but lower scores than secondary students on comprehension items; scores on items at the application level were substantially lower than scores at the knowledge level for all grades except grade 3.

MACOSA Conclusions and Observations

MACOSA judged the performance levels in science to be generally satisfactory. The following weak areas were identified: physical science and methods of science in grade 3 and 6, and earth science and science as a human endeavor in grades 9 and 12. Relative strengths were noted across all four grade levels in biological and life sciences and in methods of science.

Grade 3 students had low scores on physical science items, but this performance level was thought to be explicable in terms of the difficulty of many of the concepts involved.

In grades 9 and 12, student performances on methods of science, which were above the median for the test, were judged to be satisfactory.

Bibliographic Information

Morris Treasure, Alberta Science Achievement Study, Alberta Education, March 1979, Executive Summary, 11 pages; Condensed Report, 113 pages.

Distribution

The Condensed Report was distributed to all superintendents of schools in Alberta, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Alberta, ERIC Document Services and Micromedia. The Executive Summary was sent to all of the above as well as to all faculty of education libraries in Western Canada and all Alberta schools.

ATTITUDES TOWARDS THE WORLD OF WORK (MACOSA)

Purpose

To develop and validate an instrument to assess the attitudes of Alberta students towards the world of work, in the following areas: attitudes toward earning a living, perceptions about employer expectations, perceptions about available opportunities, relevance of school preparation for employment, and characteristics of desirable jobs.

Procedures

Two pilot tests were developed on the basis of a literature review and with reference to the five areas of concern documented above. Each test item consisted of a statement about the world of work, along with a five-point rating scale which ranged from "Strongly Disagree" to "Strongly Agree". These tests were administered to samples of students in grades 8 and 11.

Two revised tests, developed on the basis of the piloting, provided for assessment of the following 15 opinion scales: preparation by the school, interest and variability in jobs, diligence, laziness, job security, positive employer characteristics, independence, money, ambition, locus of control, confidence in succeeding, negative employer characteristics, social relations, attitudes toward unemployment, and general attitudes towards earning a living.

The revised tests were administered to students in grades 9 and 12 from eight separate geographic locations in Alberta.

Efforts were made to ensure the reliability and validity of the tests. Validity checks were done through comparisons of groups of students according to level in school (junior or senior high), sex, high school program, job aspirations, whether or not they had held full-time or part-time jobs, and whether or not they were doing well in school. Further comparisons were made using 77 students enrolled in an academic upgrading program at NAIT and 48 students enrolled in a similar program at the Alberta Vocational Centre in Edmonton.

Unlike most tests of this kind, which are designed to be independent of a particular social and economic context, these tests seek to inquire about students' attitudes towards work in the very context that they are likely to be entering--the Alberta labor force. Another difference from most previous studies, in which the opinion scales were intended to have psychological significance, is that these tests use opinion scales to aggregate the views of groups of students.

Findings

Analyses of the student opinions indicated that the 15 scales were relatively independent of each other and were structurally valid.

The overall impression given by the sample (which was not necessarily representative of Alberta students on the whole) was that the work ethic is deeply entrenched in the expressed opinions of Alberta students. Typical views included: "There are jobs available for those who want them"; "A person should feel a little ashamed for doing a sloppy job"; and "One of the most important things about a job is to know that you are doing the best you can". The sampled students appeared confident in their ability to succeed as evidenced in their responses to items like, "I will be able to handle the next step in my training"; and "When I finish my education I'll be able to get the kind of job that I want".

Space was provided at the end of the test for written comments. Approximately one-third of the students responded, and the most common opinion expressed was that the level of vocational counselling in the schools was inadequate.

Regarding the validity checks, in nearly every case the results appeared to be consistent with what might be expected from the designated groups. For example, students who were doing well in school saw interest and variability as being more important in a job, they seemed to value diligence more, they saw employers in a more positive light, they sought more independence, money was of less concern, they saw themselves as being able to control their job situation, they were far more confident, and they seemed to value the social aspect of a job. Girls gave lower ratings than did boys to job security, independence, ambition and money. Girls rated interest and variability in a job higher than did boys, they were more negative about laziness, and they gave lower ratings to "negative employer characteristics". The social aspects of work seemed more important to girls.

The data indicate that the Attitudes Towards the World of Work Scales are sufficiently valid for use in securing information about groups of students in grades 9 through 12. The tests also have face validity. Educators who administered these scales showed considerable interest in the results, particularly in the degree to which students subscribed to the work ethic, but also in the many other aspects of employment tapped by the scales.

Conclusions

These scales have a number of potential uses, such as the collecting of student opinions over an extended period of time

or among various subgroups, and as a stimulus for classroom discussion of vocational and guidance matters. The results of a test could help to sensitize teachers to the need to relate curricula to the world of work.

Bibliographic Information

Thomas O. Maguire, Eugene W. Romaniuk, Katherine A. MacRury, Attitudes Towards the World of Work, Alberta Education, March 1979, Executive Summary and Administration Manual, 43 pages; Technical Report, 213 pages.

Distribution

The Technical Report was distributed to the libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of Education in Canada, ERIC Document Services and Micromedia. The Executive Summary was sent to all of the above as well as to superintendents of schools in Alberta and to school counsellors.

DEVELOPMENT AND ADMINISTRATION OF THE HIGH SCHOOL SOCIAL STUDIES ACHIEVEMENT TESTS (MACOSA)

Purpose

To establish Alberta norms of performance for high school social studies.

To provide a data base for future assessment.

Procedures

The test used in this study was developed by the Student Evaluation and Data Processing Branch (SEDPS) of Alberta Education to measure performances in social studies at the high school level. This test had been normed in June 1977, and like the tests developed directly for MACOSA, focuses on only a part of the range of curricular objectives, in this case only cognitive objectives.

The involvement of over 80 social studies teachers in selecting objectives and developing items, together with the piot testing of the items attempted to ensure that for the 1971 social studies curriculum the test was as valid as possible.

The test contains 40 items for each grade level, or a total of 120 items. It was constructed to measure two types of performance--mental processes, and knowledge of content areas. The following mental processes were tested: recalling; acquiring and organizing; interpreting; and analyzing, evaluating and synthesizing. The content areas are outlined below:

Social Studies 10: participatory government, national unity, poverty, regional disparity, urbanization

Social Studies 20: tradition and change, population and production

Social Studies 30: conflict and cooperation, ideologies, political system, economic systems

As well, 49 test items are related to Canadian content. Because of the nature of the 1971 high school social studies curriculum, most of these items fall in the Social Studies 10 section of the test.

The total test was administered to students in grades 10, 11, and 12.

Findings

As might be expected, Social Studies 30 students scored higher on Social Studies 10 and 20 items than they did on Social Studies 30 items. Also, Social Studies 30 students scored higher on the 10- and 20- level items than did students registered in Social Studies 10 and 20.

MACOSA Conclusions and Observations

MACOSA reviewed only the data related to achievement levels of Social Studies 30 students. Performance levels for these students were judged to be unsatisfactory on the Social Studies 30- level items but satisfactory on Social Studies 10- and 20- level items. Noting that performances by Social Studies 30 students were generally higher than those of 10- and 20- level students, the Advisory Committee concluded that Social Studies 30 students had built upon the knowledge and skills learned at earlier course levels, including in particular the knowledge related to Canadian content, which appears primarily in the Social Studies 10 curriculum.

MACOSA also concluded that deficiencies shown by Social Studies 30 students cannot be generalized across the high school program, but rather must be qualified according to (a) mental process, (b) content area, and (c) available data.

Finally, MACOSA noted that the difficulty test developers experienced in preparing a test for province-wide use was largely related to a lack of specified common elements in the curriculum. If such tests are to be given in the future, a clearly specified core curriculum would be desirable. Also, recently approved changes in the Alberta curriculum for social studies suggest that the curriculum validity of the present SEDPS high school achievement test for social studies may be in doubt. MACOSA hypothesized that the performance levels on the present test may bear a substantial relationship to how successfully the social studies curriculum is being implemented in the schools.

Bibliographic Information

R. Lopatka, Report on the Development and Administration of the High School Achievement Tests, Alberta Education, Fall 1978, 90 pages.

Distribution

The report was distributed to the libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education and Conference of Alberta School Superintendents.

DEVELOPMENT OF MODELS FOR ASSESSING AFFECTIVE OBJECTIVES IN THE SOCIAL STUDIES (MACOSA)

Purpose of the Study

To identify and specify affective objectives in the social studies.

To develop examples or models of tests to assess these objectives.

Procedures

The study was directed towards the social studies programs for grades 6 and 12. The first step was the development of a chart which classified the many affective objectives in the social studies according to such categories as feelings, beliefs, attitudes and values. Since the range of objectives was very broad, the project was narrowed to the area of citizenship education, which has traditionally received a major emphasis and is still a high priority in the current social studies curriculum. The objectives which were chosen for use in test development were carefully referenced to Alberta Education curriculum guides and to the Basic Goals of Education statement.

The next step, involved various committees of teachers who constructed models and appropriate test items for assessing progress towards the selected objectives.

Eight tests were developed for grade 6, and 22 tests were developed for grade 12. The tests may be administered separately or in sets. Since the scope of the study did not allow for field testing, the validity of these models has not been determined.

Conclusions and Observations

Validated versions of these test models could assist teachers in evaluating achievement of the affective objectives for citizenship education in social studies programs. They could also be useful for monitoring attitudinal changes among students over time and for determining the needs and interests of students.

Bibliographic Information

R. Lopatka, Development of Models for Assessing Affective Objectives in the Social Studies, Alberta Education, December 1978, 132 pages.

Distribution

This report was distributed to the libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education and Conference of Alberta School Superintendents.

ELEMENTS RELATED TO STUDENT SUCCESS IN SCHOOLING AND EDUCATION (MACOSA)

Purpose

The purpose of this study was to review the literature on in-school and out-of-school factors that affect student academic achievement. The combination of factors and how they are measured should provide information on how well a given student should achieve and in what context.

Procedure

Fifty-three studies were reviewed with respect to factors related to student success.

Findings

The factors identified as related to student success are spread over two major classifications--that is out-of-school factors and in-school factors.

The review of the literature supports that idea that many factors relate to student success in schooling and education, and that a complex relationship among the factors and outcomes of education probably exists. Hence, no one factor can be chosen in complete isolation in an attempt to predict student success. Out-of-school factors affect what the student brings to the formal educational scene and in interaction with the educational factors may result in changes in any, all, or none of the four domains: cognitive, affective, process and psychomotor.

Discussion

This partial review of the literature appears to support the dichotomy of responsibilities of education into in-school factors and out-of-school factors as described in The Goals of Basic Education for Alberta (Torgunrud, 1977), which indicates two major sources of responsibility for the outcomes of education.

Bibliographic Information

G. Gay, Elements Related to Student Success in Schooling and Education, Alberta Education, March 1979, Complete Report, 64 pages. An executive summary of this paper and one by L. Fedigan was prepared, 14 pages.

Distribution

The Executive Summary was distributed to all superintendents of schools in Alberta, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Alberta, ERIC Document Services and Micromedia. The Complete Report was sent to Regional Office libraries.

LISTENING AND SPEAKING OBJECTIVES (MACOSA)

Purpose

Since comprehensive objectives for Listening and Speaking, Grades 1 to 12 were not readily available, the purpose of this project was to develop a set of objectives.

Design

Edmonton Public School teachers, specialists and consultants who were already familiar with development of objectives formed committees at Division I, II, III and IV levels to further develop and refine objectives for Listening and Speaking. A package of materials on speaking and listening was supplied for prior study and each committee received inservice from an Edmonton Public School pupil assessment consultant on the writing of objectives. The Project Coordinator worked with each committee as the objectives were discussed, developed, and refined. Copies of the first draft of the objectives were distributed to members of three committees: a selected Review Committee drawn from various areas of the province; The Alberta Language Arts Curriculum Coordinating Committee; and the MACOSA Listening and Speaking Committee. The objectives were then revised to include the emphases identified by these committees.

Major Outcomes

The major product of the project was a set of Listening and Speaking Objectives for Grades 1 to 12.

Conclusions and Implications

The objectives defined by this project will provide a valuable source for the future development of curriculum courses at every grade level.

Another implication of this project is an awareness that the development of curriculum objectives must precede assessment for the assessment to be valid.

Bibliographic Information

Edmonton Public School System, Listening and Speaking Objectives: Divisions I-IV, Alberta Education, March 1979, 135 pages.

Distribution

The report was sent to all Alberta school superintendents, Regional Offices of Education and Ministries of Education in Canada.

SCHOOL-BASED ELEMENTS RELATED TO ACHIEVEMENT
A REVIEW OF THE LITERATURE (MACOSA)

Purpose

The purpose of this paper was to identify how student achievement is related to teaching behaviors and to context variables such as classroom climate, teacher expectations, and student characteristics.

Procedure

The pertinent research literature on this subject was reviewed and summarized in this report.

Findings

Early studies of teaching behavior found that teacher traits such as enthusiasm and warmth appeared to promote effective learning. During the 1960's most researchers were committed to the indirect teaching method--that is, making use of student contributions and being democratic rather than authoritarian--and their studies attempted to show that this approach was effective in terms of student achievement.

More recently, researchers who have reviewed large numbers of studies on the subject have tended to reject indirectness as an effective teaching style. Five promising teaching behavior variables which have been supported by significant results in several studies are: clarity, variability, enthusiasm, task orientation or businesslike manner, and student opportunity to learn what is being tested. In a further study, consistent results were found for only four variables: allowing students that opportunity to learn what is being tested, task orientation, and direct questioning were found to have positive effects on achievement, while teacher criticism was found to have a negative effect.

One study found that most consistently effective teachers tended to be more traditional in their teaching styles. Other studies have served to reinforce the idea that direct teaching is generally effective in lower elementary grades where basic skills are being acquired.

Most studies which attempt to find out the sort of curriculum which is most effective in terms of achievement are inconclusive.

Discussion

The report points out that achievement goals must be carefully examined; in other words, there is need to be selective about what outcome criteria are stressed.

Bibliographic Information

Larry Fedigan, School-Based Elements Related to School Achievement, Alberta Education, March 1979, Complete Report, 112 pages. An executive summary of this paper and one by G. Gay was prepared, 14 pages.

Distribution

The Executive Summary was distributed to all superintendents of schools in Alberta, libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of education in Alberta, ERIC Document Services and Micromedia. The Complete Report was sent to Regional Office libraries.

SCHOOL SUBJECTS ATTITUDE SCALE (MACOSA)

Purpose of the Study

To develop and validate an instrument to assess students' attitudes towards school subjects in Alberta.

Procedures

The school subjects attitudes scales used a semantic differential approach, in which respondents are requested to indicate the meaning they attach to a given concept (in this case a school subject) by recording it on a five-point rating scale between carefully selected bipolar adjectives such as "good-bad", "hard-soft", or "fast-slow".

A list of more than 100 bipolar adjectives were assembled from various sources including other attitudes scales. From this list 24 pairs were selected for a long form of the test and 12 pairs were selected for a short form. Selections were made through discussions with teachers and students and through analysis of trial forms.

The scales were directed towards students in grades 5 and 8 and were designed to measure attitudes among groups of students rather than to determine the attitudes of individual students.

As a validity check the test developers hypothesized the direction of differences between groups with known characteristics and tested whether the scale discriminated between these groups. Sex differences, cultural differences, differences related to type of school or class and aptitude or intelligence differences were analysed. Test-retest reliability was also checked.

Findings

The field trials of the attitudes towards school subjects scales indicated that this instrument is reliable and valid, but pilot testing has been necessarily limited. The scale's remarkable face validity suggests that it would have credibility with school personnel.

Factor analysis revealed three major dimensions in the scale: "evaluation" (general feeling towards the subject), "usefulness" of the subject, and "difficulty". Comparisons of the different groups produced the expected results for all groups used, indicating that the scale is quite valid. For example, the scale indicated a more positive attitude towards science among males than among females. It is interesting to

note, however, that correlations between attitudes and achievement were generally low or not significant and that correlations between attitude and intelligence were not significant.

Conclusions and Observations

Until Alberta norms are established for this scale, its most appropriate uses would be for study and research. One very good use for the scale in future might be program evaluation, where student attitudes could be assessed before and after a program change. A revision of the scales was carried out in 1979.

Bibliographic Information

V. R. Nyberg and S. C. T. Clarke, School Subjects Attitude Scales, Alberta Education, 1979, 61 pages.

Distribution

The Technical Report was distributed to the libraries of the Alberta Teachers' Association, Alberta School Trustees' Association, Regional Offices of Education, faculties of Education in Canada, ERIC Document Services and Micromedia. The Summary was sent to all of the above as well as to superintendents of schools in Alberta and school counsellors.